

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claim 7 and AMEND claims 8, 9, 11, 13 and 15 in accordance with the following:

1. (original) A device to implant impurities into a semiconductor wafer, comprising:
a pressure compensation unit;
a beam gun to shoot an ion beam at a semiconductor wafer;
first and second ion gauges; and
a switching device to selectively connect the first or second ion gauge to the pressure compensation unit.
2. (original) A device to implant impurities into a semiconductor wafer according to claim 1, further comprising a current sensor to sense the number of implanted ions.
3. (original) A device to implant impurities into a semiconductor wafer according to claim 1, wherein
the beam gun is positioned upstream from a process chamber,
the first ion gauge is positioned outside of the process chamber, and
the second ion gauge is positioned within the process chamber.
4. (original) A device to implant impurities into a semiconductor wafer according to claim 3, wherein
the device further comprises a cryo pump to minimize the pressure within the process chamber, and
the first ion gauge is positioned between the process chamber and the cryo pump.
5. (original) A device to implant impurities into a semiconductor wafer according to claim 1, further comprising:
a disk faraday to receive ions from the ion gun; and
a current meter to count the number of electrons flowing to the disk faraday to neutralize

the ions.

6. (original) A device to implant impurities into a semiconductor wafer according to claim 1, wherein a portion of the ions are neutralized before reaching the semiconductor wafer.

7. (cancelled)

8. (currently amended) A device to implant impurities into a semiconductor wafer according to claim 1, wherein

a plurality of wafers are arranged on a support disk which rotates about an axis of rotation substantially parallel to an ion beam path,

at least some of the wafers have a resist layer, and

resist outgassing occurs when the ion beam strikes the resist layer.

9. (currently amended) A device to implant impurities into a semiconductor wafer according to claim 8, wherein

a disk faraday receives ions from the ion gun,

a current meter counts the number of electrons flowing to the disk faraday to neutralize the ions,

the support disk has a radially extending slot arranged among the wafers,

the ion beam travels through the slot as the support disk rotates, and

the support disk is arranged between the disk faraday and the ion gun.

10. (original) A device to implant impurities into a semiconductor wafer according to claim 1, wherein

the chamber has a wall, and

the second ion gauge extends through the wall of the chamber.

11. (currently amended) A device to implant impurities into a semiconductor wafer according to claim 1, wherein

a plurality of wafers are arranged on a support disk which rotates about an axis of rotation substantially parallel to an ion beam path,

the support disk moves radially at a radial speed with respect to the ion beam, and

the radial speed is varied to control the amount of time the ion beam is focused at different radial positions on the support disk.

12. (original) A device to implant impurities into a semiconductor wafer according to claim 11, wherein the radial speed decreases when it is determined that the number of impurities being implanted is relatively low.

13. (currently amended) A device to implant impurities into a semiconductor wafer according to claim 11, wherein:

the first and second ion gauges sense pressure;

a disk faraday to receive ions from the ion gun; and

the device further comprises:

a current meter to count the number of electrons flowing to the disk faraday to neutralize the ions; and

the pressure compensation unit varies the radial speed of the support disk as a function of the current sensed by the current meter and as a function of the pressure sensed by the ion gauge connected to the pressure compensation unit.

14. (original) A device to implant impurities into a semiconductor wafer according to claim 1, wherein the first ion gauge is used for high energy implants and the second ion gauge is used for low energy implants.

15. (currently amended) A device to implant impurities into a semiconductor wafer, comprising:

a process chamber having a wall;

a pressure compensation unit;

a support disk to support a plurality of semiconductor wafers within the process chamber, the support disk having a radially extending slot arranged among the wafers;

a beam gun positioned upstream from the process chamber to shoot an ion beam at the semiconductor wafers;

a cryo pump to minimize the pressure within the process chamber;

first and second ion gauges, the first ion gauge being positioned between the process chamber and the cryo pump, the second ion gauge extending through the wall of the process chamber;

a switching device to selectively connect the first or second ion gauge to the pressure compensation unit;

a disk faraday to receive ions from the ion gun after the ions travel through the slot in the support disk; and

a current meter to count the number of electrons flowing to the disk faraday to neutralize

the ions.